

Studies on the Traditional Uses of Some Medicinal Shrubs of Swat Kohistan, Pakistan

Muhammad HAMAYUN^{1*}, Sumera Afzal KHAN²

(1 *Department of Agronomy, College of Agriculture and Life Sciences, Kyungpook National University, Republic of Korea;*

2 *Centre of Biotechnology, University of Peshawar, Pakistan*)

Abstract: This paper is based on an ethnobotanical project carried out in the remote Hindukush mountain region of Swat Kohistan. Most of the local people still rely on medicinal plants for curing different diseases. However, the traditional use and pertinent knowledge of medicinal plants are on decline with the introduction of allopathic drugs in the study area. During present study, an effort was made to document the traditional knowledge of some important medicinal shrubs of Swat Kohistan. The traditional uses of 18 frequently used shrubs belonging to 12 different families were thus documented. The Kohistani people use these medicinal shrubs for curing multiple ailments and some of these are also exported to other parts of Pakistan.

Key words: Ethnomedicine; Medicinal Shrubs; Swat Kohistan; Hindu-Kush mountains

CLC number: Q 948

Document Code: A

Article ID: 0253 - 2700(2006)06 - 665 - 04

The traditional herbal medicine bequeathed from generation to generation is rich in domestic recipes and communal practice. Encompassing concepts and methods for the protection and restoration of health, traditional medicine has served as a fount of alternative medicine, new pharmaceuticals, and healthcare products. The best known examples of traditional medicine, differing in concept and protocol, are well-developed systems such as acupuncture, Unani system and ayurvedic medicine that have been widely used to conserve human health in China, Pakistan and India.

In developing countries, herbal medicine is still the mainstay of health care, using local traditions and beliefs. According to World Health Organization (WHO), health is a state of complete physical, mental, and social well being and not merely the absence of disease or infirmity. It has been estimated that about 20 000 plant species are used for medicinal purposes throughout the world. According to WHO report 70% of the world population use medicinal plants for curing diseases through their traditional practitioners. In sub-continent, plant oriented drugs are used extens-

ively and from a very long time. According to a survey conducted by WHO, traditional healers treat 65 % patients in Sri Lanka, 60 % in Indonesia, 75 % in Nepal, 85 % in Myanmar, 80 % in India and 90 % in Bangladesh. In Pakistan, 60 % of the population, especially in villages is getting health care by traditional practitioners (Hakims), who prescribe herbal preparations (Haq, 1983). The practice of traditional medicine is also widespread in China, Japan and Thailand.

Swat Kohistan

Swat Kohistan comprise borders the Northern Areas of Gilgit and Chitral in the North, District Swat in the South. Indus Kohistan in the east and upper parts of District Dir and some parts of Chitral in the West. The population of Swat Kohistan is 31 029 and the area is about 206 523 hectares (Anonymous, 1998). The minimum elevation of Swat Kohistan is 2 000 m at Kalam. Kalam is the major town and center of Swat Kohistan.

Nature has been very generous to the region in its endowments of towering invincible peaks, gigantic glaciers and majestic streams, not to mention the splendor of its valleys, the meadows and high altitude plateaus.

* Author for correspondence. E - mail: hamayun73@gmail.com

Received date: 2005-12-26, Accepted date: 2006-03-27

History of Swat Kohistan

The predecessors of the present Kohistani population people are most likely the same as the Gawri, who inhabited the lower more fertile parts of district Dir from the days of Alexander the Great. In 11th century A.D. the forces of Mehmud of Ghazna conquered the area and the indigenous population was thus forced to flee to the remote and inhospitable upper mountains. Local traditions confirm that from there groups of Gawri settlers crossed the mountain passes in to Utror, Kalam and Ushu valleys which are now parts of District Swat, while the rest remained in the upper Panjkora valley of District Dir.

During 14th century A.D. the Yousafzai tribe of Pukhtoons attacked the lower parts of Swat and Dir districts forcing the already resident Pukhtoons to flee to the upper parts of Swat and Panjkora valley. Under the influence of these new immigrants, Kohistanis converted to Islam, probably in 15th or 16th century (Baart, 1997). As the new immigrants belong to Hanfia School of Islamic law, subsequently the new converted kohistanis also belong to the same group of Sunni Muslims.

The Kohistanis enjoyed large degree of political independence for many centuries. After independence of India from British rule, the area came under the rule of Wali (former ruler of Swat) in 1947. At that time swat was an autonomous state. The Wali (commonly called Baachaa Sahib of Swat) built roads, schools and hospitals in the area. During the reign of Wali Sahib, the area witnessed great development like other parts of Swat. The Kohistan area was finally incorporated with Pakistan in 1969.

The residents of Swat Kohistan still enjoy semi-independent status, as the Government is unable to exert her direct and efficient control due to its remoteness and partly because of local traditions and tribal system. The administration does not enjoy enough influence and authority in the area and the tribal traditions still take precedence over official Pakistani law.

Material and Methods

The project area was visited several times for collection of

data during the year 2002 - 2003. During fieldwork, interviews were conducted with the local inhabitants, selected informants, the herbalists 'hakims' (local physicians of eastern system of medicine), pansaries (medicinal plants sellers in the local markets). To identify the most attractive and frequently used medicinal plants for the indigenous community of Swat Kohistan, a quantitative ethnopharmacological method was used (Friedman *et al.* 1986). According to this method, the percentage of informants claiming the use of a certain plant for the same major purpose, also known as its Fidelity Level (FL), was calculated for each species. Thus, plants could be rated on the basis of their relative efficiency, as they appear in the eyes of their consumers. Since some plants that received high FL values were known to only a fraction of the informants, an appropriate correction factor was introduced. The Relative Popularity Level (RPL) can be calculated for each plant from the relationship between the number of informants who know of a certain plant and the average number of uses per plant.

Results

Present study revealed that 18 shrubby plant species belonging to 12 families are utilized for ethnobotanical purposes in Swat Kohistan. Most of these plants are used for curing different ailments in the study area. Some of these plants are also exported to other parts of the country and thus they play a vital role in the socio-economic conditions of the people living in Swat Kohistan.

These plant species with their respective families, local names, part used and local uses are given in Table 1.

Discussion

The primitive people of all ages had knowledge of medicinal plants that they acquire as a result of trial and error. This knowledge is still alive and several hundred species are used in herbal remedies in indigenous system of medicines, where the whole plant or plant part or its extraction is used. The use of plants for the existence of human being is as old a practice as the human race itself. The accumulation of knowledge of plant use however coevolved with human civilization through the experimental use of plants, generation after generation. Medicinal plants are widely used in

Table 1 Traditional uses of medicinal plants in Swat-Kohistan

Plant material	Part used	Local uses
Berberidaceae		
<i>Berberis lycium</i> Royle [Hez/Khawaray]	Rhizome and rhizome bark	The rhizome is used locally for body and bones pain . Rhizome bark is used for curing stomachic , strengthening sex organs and treatment of internal wounds . The fruits are edible .
<i>Berberis vulgaris</i> L . [Toor kwarray]	Rhizome and rhizome bark	Locally used as stomachic , intestinal colic , diuretic and expectorant . Also used for jaundice and liver disorders .
Buxaceae		
<i>Buxus wallichiana</i> Baill . [Shamshad]	Whole plant, leaves, stem	It is ant rheumatic , diaphoretic , purgative , poisonous and febrifuge . The stern is use for toothbrush and is a remedy for toothache . Also used in making wooden spoons and utensils . Also used in naming i.e ., Shamshad .
Fumariaceae		
<i>Corydalis gowaniana</i> Wall . [Mamera]	Roots flowers	The fresh roots are crushed and the liquid obtained is applied to eyes for cleaning and improving eyesight .
Rosaceae		
<i>Cotoneaster nummularia</i> Fisch . et Mey . [Karwara]	Whole plant	It is used for thatching and sheltering roof, used as fuel wood . It is also used for fencing .
<i>Rosa brunonii</i> Lindl . [Zangaley Gulab]	Flowers, branches	Ornamental , aromatic, used in fencing and hedges , Honey bee species .Used in naming i.e ., Gulab Khan .
<i>Rosa webbiana</i> Wall . ex Royle [Palwari]	Flowers, branches	Ornamental , cultivated at the edge of fields as fencing and hedge plant, honeybee species .
<i>Sorbaria tomentosa</i> (Lindl .) Rehder [Beree]	Inflorescence	The inflorescence of Sorbaria is mixed with mustard oil and applied on the skin of newly born babe to remove skin rashes and also applied to the wounds as anti septic agent .
Thymeliaceae		
<i>Daphne mucronata</i> Royle [Laighonai]	Fruits, bark, leaves, flowers	The fruits are purgative . The bark and leaves are used as poultice for tumors and swellings . The leaves are also poisonous for livestock . The fruits are edible . Their poultice is used for the treatment of rheumatism . They are also used as fuel wood . Flowers are ornamental .
Elaegnaceae		
<i>Elaeagnus parviflora</i> Wall . ex Royle [Ghanum rangai]	Whole plant	Locally used as fuel wood , fencing and hedge making . Juice of root is use for headache and heart burning . The fruits are edible and cardiac stimulant .
<i>Hippophae rhamnoides</i> L . [Sibak Thaan]	Wood, fruit	Wood is used for fuel and fruits are edible .
Ephedraceae		
<i>Ephedra gerardiana</i> Wall . ex Stapf [Someni]	Fruit and Leaves	The plant is used for curing asthmatic bronchitis and rheumatism . The tincture of Ephedra is a cardiac circulatory stimulant . The plant is also used for curing hay fever and cold .
<i>Ephedra intermedia</i> Schrenk et C.A . Mey [Huma]	Fruit and Leaves	The plant is used for curing asthmatic bronchitis and rheumatism . The tincture of Ephedra is a cardiac circulatory stimulant . The plant is also used for curing hay fever and cold .
Fabaceae		
<i>Indigofera heterantha</i> Wall . ex Brand . [Ghoureja]	Rhizome bark, shoots, branches	The bark is peeled off from the rhizome and crushed . It is then added to a glass of water and kept for an hour . The water is used for relieving abdominal pain . Shoots serve as fodder for goats . Young branches are twisted into ropes, also tied to make brooms for cleaning roofs and lawns . Fuel wood, for thatching and fencing, wood ash is used for making snuff, honey bee species .
Oleaceae		
<i>Jasminum humile</i> L . [Ziar Rambail/Yasmin]	Whole plant	Root decoction is used for curing ringworms . It is use for antibioses and skin disease . Ornamental . Used in naming i.e Rambail for male and Yasmin for female .
Rutaceae		
<i>Skimmia laureola</i> (DC .) Sieb . & Zucc . ex Walp [Namer]	Leaves	Used in curing small pox . It is believed that smoke from leaves purify air and repel evils . The leaves are dried and added to wheat flour . It is then given to livestock as anthelmintic .
Solanaceae		
<i>Withania somnifera</i> (L .) Dunal . [Kutilal]	Leaves fruits and roots	Leaves and roots are used as poultice to swellings, ulcers and carbuncles . The fruit is diuretic . The root is an aphrodisiac tonic , diuretic , narcotic and used in rheumatism .
Asteraceae		
<i>Xanthium strumarium</i> L . [Geshkay]	Leaves	Leaves are applied for curing skin diseases . Leaf decoction is also locally used for curing malarial fever .

household remedies and by practitioners of traditional systems of medicines, particularly in the developing world where public health care services are limited. At the same time, interest in traditional and contemporary and alternative medicine in industrialized countries has grown rapidly. The people of Swat Kohistan, like most other indigenous people depend upon plant resources for their medicinal requirements and in this way a traditional system of folk recipes has evolved in the area over a period of time. People use 138 plant species for curing different ailments and more than 62% of the local population is dependent on medicinal plants for primary health care. People utilize different parts of the plant for medicinal purposes. For instance, the rhizome of *Berberis lycium* is used locally for body and bones pain. Rhizome bark is used for stomachache, strengthening sex organs and broken bones. The rhizome is dried and then crushed to powder. The powder is then mixed in a local sweet dish called Halwa. Some times the rhizome powder is administered with milk for giving relief in pains. Similarly, Hamayun *et al.* (2003) reported that medicinal plants collected in District Buner are used by the inhabitants to cure various ailments. They use the leaves decoction of *Ajuga bracteosa* Wall. ex Bth. for the treatment of jaundice, hypertension and sore throat. Roots of *Justicea adathoda* L. is used in rheumatism, pneumonia and cough, while leaves are used as antiseptic, expectorant, antispasmodic, and demulcent. Gum of *Acacia modesta* Wall. is used as tonic and stimulant. The

leaves of *Datura innoxia* Mill. is used in toothache, headache and epilepsy, the seeds are antipyretic, and narcotic. *Paeonia emodi* is used in backache, dropsy, epilepsy, convulsions, hysteria and uterine diseases. Similar reports were also documented by Shinwari *et al.* (2002), Sadaqat (1995) and Ahmad *et al.* (2004) for other parts of Pakistan.

References:

- Ahmad H, Khan S, Khan A, *et al.*, 2004. Ethnobotanical resources of Manikhel forests, Orakzai Tirah, Pakistan [DB]. *J. Ethnobotanical Leaflets* (<http://www.siu.edu/~ebl/>)
- Anonymous, 1998. District Census Report, Population Census Organization, Statistics Division, Government of Pakistan, Islamabad [Z]. P: 198—201
- Baart JLG, 1997. The Sounds and Tones of Kalam Kohistani. National Institute of Pakistan Studies Quaid-i-Azam University and Summer Institute of Linguistics [Z]. P: 1—9
- Friedman J, Yaniv Z, Dafni A, *et al.*, 1986. A preliminary classification of the healing potential of medicinal plants based on a rational analysis of an ethnopharmacological field survey among Bedouins in the Negev deserts, Israel [J]. *J. Ethnopharmacology*, **16**: 275—287
- Hamayun M, Khan A, Khan MA, 2003. Common medicinal folk recipes of District Buner, NWFP, Pakistan [DB]. *J. Ethnobotanical Leaflets* (<http://www.siu.edu/~ebl/>)
- Haq I, 1983. Medicinal Plants [M]. Pakistan: Hamdard Foundation Press
- Sadaqat, 1995. Medicinal plants of family Cucurbitaceae (Part-2) [J]. *Hamd Med*, **34**: 91—101
- Shinwari ZK, Gilani SS, Akhlaq M, 2002. Sustainable harvest of medicinal plants at Bar and Shinaki Valleys, Gilgit (Northern Pakistan) [R]. Consultancy Report: WWF-P, Gilgit